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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/779,634	02/18/2004	Cheng-ta Wu	07942.0013-01	9096

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EXAMINER

JOHNSON, EDWARD M

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 02/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/779,634

Applicant(s)

WU ET AL.

Examiner

Edward M. Johnson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16,17 and 19-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16,17 and 19-24 is/are rejected.
- 7) ☒ Claim(s) 16 and 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Claim Objections

1. Claims 16 and 21 are objected to because of the following informalities: claim 16, line 16, "power-collection" appears incorrect. Examiner suggests --powder-collection--. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 16-19 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holst et al. US 5,955,037.

Applicant claims a method for processing residual gas, comprising: providing a chamber, introducing residual gas into the chamber, the residual gas having a first toxic level, introducing an inert gas; diluting the residual gas; introducing a reactive gas into the chamber to cause a reaction between the diluted residual gas and the reactive gas to produce a mixed gas; outputting the mixed gas from the chamber, the mixed gas

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having a toxic level lower than the first toxic level; and providing a powder-collection apparatus to allow continuous removal of powder produced by the reaction of the residual gas, the inert gas and the reactive gas in the chamber.

Holst et al. discloses an apparatus and process to treat gaseous effluents such as waste gases from semiconductor manufacturing operations comprising a waste gas inlet mechanism, a first gas inlet mechanism for an inert gas such as nitrogen, and a second inlet mechanism for a reactive gas such as dry air, a plurality of baffles and a gas outlet mechanism (see abstract; column 10, lines 35-41; column 12, lines 40-45; and column 13, lines 4-12 and 65-67). Holst et al. also discloses connecting a wet scrubber to the apparatus wherein the gas outlet connects to the wet scrubber (col. 13, lines 65-67 and col. 14, lines 1-5). Holst et al. also discloses the capture of fine particulates (powder) with the use of an eductor (col. 15, lines 6-8). Holst et al. teaches wherein the eductor is coupled with a suitable filtration module, to permit filtration of the eductor discharge.

It would have been obvious to one of ordinary skill in the art to expect the process and apparatus as taught by Holst et al. to have been capable of the continuous removal of powder from both the chamber and eductor/filtration apparatus, after

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being produced by the reaction of residual gas, inert gas, and reactive gas, because Holst et al. clearly discloses a method for treating waste gases wherein the waste gas is treated with an inert gas and a reactive gas wherein the capture of fine particulate matter may be captured from the treatment system, and also because apparatus limitations are generally not given undue weight in process claims.

It would have been further obvious to couple a first and second gate to the bottom of the chamber to open and close for removal of powder, because apparatus limitations are not given undue patentable weight in process claims and also because Holst discloses prevention of particle accumulation in operation of the oxidation unit, which would motivate an ordinary artisan to install such a gate to control the removal and prevent accumulation in operation, as disclosed.

With respect to claims 19 and 23, Holst et al. teaches a plurality of baffles, which would make it obvious to increase the path of the diluted residual gas and reactive gas, since Holst et al. discloses high gas velocities and long residence times (column 13, lines 4-11).

4. Claims 20 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holst et al. (US Patent 5,955,037), as

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applied to claims 16-19 and 21-23 above, and further in view of Seeger et al. (US Patent 5,521,263).

Applicant claims, with respect to claims 20 and 24, a step of cooling the chamber with a water-cooling pipe.

Holst et al. discloses an apparatus and process to treat gaseous effluents such as waste gases from semiconductor manufacturing operations comprising a waste gas inlet mechanism, a first gas inlet mechanism for an inert gas such as nitrogen, and a second inlet mechanism for a reactive gas such as dry air, a plurality of baffles and a gas outlet mechanism. Holst et al. also discloses having a heat exchanger equipped to the chamber (column 11, lines 60-67 and column 12, lines 1-37).

However, Holst et al. does not disclose a water-cooling pipe.

Seeger et al. teaches wherein it is known in the art to have a reactor with a heat exchanger jacket that may comprise an electric heater or a water heat exchanger for the heating or the cooling of the reaction medium by circulating hot or cold water through the reactor jacket (col. 7, lines 35-45).

Therefore, it would have been obvious to one of ordinary skill in the art to have a water-cooled pipe as the heat exchanger in Holst et al., since Holst et al. discloses having a heat exchanger on the reactor and teaches wherein any suitable

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heat exchanger, such as an electric heater may be used and Seeger et al. teaches that to cool or heat a reactor an electric heater or a water heat exchanger may be used in the alternative.

Response to Arguments

5. Applicant's arguments filed 8/24/05 have been fully considered but they are not persuasive.

It is argued that as Applicants previously pointed out, Holst et al.'s eductor... to a reaction chamber. This is not persuasive because it would have been further obvious to couple a first and second gate to the bottom of the chamber to open and close for removal of powder, because Holst discloses prevention of particle accumulation in operation of the oxidation unit, which would motivate an ordinary artisan to install such a gate to control the removal and prevent accumulation in operation, as disclosed.

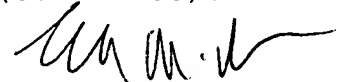
It is argued that Seeger et al. fails to cure the deficiencies of Holst et al. This is not persuasive because Seeger is not relied upon for Applicant's alleged deficiencies, which are rendered obvious by Holst. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward M. Johnson whose telephone number is 571-272-1352. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Edward M. Johnson
Primary Examiner
Art Unit 1754

EMJ